DEPARTMENT OF ECOLOGY
State of Washington

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
REPORT OF EXAMINATION
To Appropriate Public Waters of the State of Washington

APPLICATION DATE	APPLICATION NO.
August 25, 2006	G2-30363

NAME
Olympic Property Group LLC

ADDRESS/STREET	CITY/STATE	ZIP CODE
19245 Tenth Avenue NE	Poulsbo, Washington	98370-7456

PUBLIC WATERS TO BE APPROPRIATED

SOURCE
Well

TRIBUTARY OF (IF SURFACE WATERS)

MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE	MAXIMUM ACRE-FEET PER YEAR
	158	80.5

QUANTITY, TYPE OF USE, PERIOD OF USE
Municipal Supply - continuous

LOCATION OF WITHDRAWAL

APPROXIMATE LOCATION OF WITHDRAWAL
300 feet south and 1,500 feet east from the NW corner of Section 22, T. 28 N., R. 01 E. W.M.

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)	SECTION	TOWNSHIP	RANGE	WRIA	COUNTY
NE ¼ of the NW ¼	22	28 N.	01 E. W.M.	17	Jefferson

PARCEL NUMBER	LATITUDE	LONGITUDE	DATUM
821222001	47° 54' 36.39"	122° 39' 56.39"	WGS84

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED
[Attachment 1 shows location of the authorized place of use and point(s) of diversion or withdrawal.]

The place of use of this water right is the service area described in the most recent Water System Plan/Small Water System Management Program approved by the Washington State Department of Health for the proposed water system associated with the Tala Point Planned Rural Residential Development, so long as the proposed water system is and remains in compliance with the criteria in RCW 90.03.386(2). RCW 90.03.386 may have the effect of revising the place of use of this water right.

If the criteria in RCW 90.03.386(2) are not met, the place of use of this water right reverts to the last place of use described by Ecology in a water right authorization.

DESCRIPTION OF PROPOSED WORKS

The proposed water system will be constructed to supply water for domestic uses to the proposed Tala Point Planned Rural Residential Development (PRRD), as well as adjacent properties that are currently undeveloped or are served from other sources. The proposed system will serve an estimated 244 single-family residential lots, including 54 lots on 251 acres that are planned as part of the Tala Point PRRD. The water-supply system will include one well pump, sized to meet maximum daily demand. The well pump will deliver water to a storage facility that will store water to meet peak hourly demands, as required by the Washington State Department of Health (Health). The well pump will require a capacity of approximately 158 gpm to meet projected demands. It is anticipated that the system will also include distribution and transmission piping, and other pumping and pressure-reducing facilities needed to distribute water to customers in accordance with Health requirements.

DEVELOPMENT SCHEDULE

BEGIN PROJECT BY THIS DATE	COMPLETE PROJECT BY THIS DATE	WATER PUT TO FULL USE BY THIS DATE
December 31, 2013	December 31, 2018	December 31, 2023

PROVISIONS

In order to maintain a sustainable supply of water, pumping must be managed so that static water levels do not progressively decline from year to year. Static water level is defined as the water level in a well when no pumping is occurring and the water level has fully recovered from previous pumping. Static water levels shall be measured and recorded monthly, using a consistent methodology. Data for the previous year shall be submitted by January 31 to the Department of Ecology.

An approved measuring device shall be installed and maintained for each of the sources authorized by this water right in accordance with the rule "Requirements for Measuring and Reporting Water Use", WAC 173-173. http://www.ecy.wa.gov/programs/wr/measuring/measuringhome.html

Water use data shall be recorded annually and maintained by the property owner for a minimum of five years, and shall be promptly submitted to the Department of Ecology upon request.

Department of Ecology personnel, upon presentation of proper credentials, shall have access at reasonable times, to the project location, and to inspect at reasonable times, records of water use, wells, diversions, measuring devices and associated distribution systems for compliance with water law.

WAC 173-173 describes the requirements for data accuracy, device installation and operation, and information reporting. It also allows a water user to petition the Department of Ecology for modifications to some of the requirements

The water right holder shall file the notice of Proof of Appropriation of water (under which the certificate of water right is issued) when the permanent distribution system has been constructed and the quantity of water required by the project has been put to full beneficial use. The certificate will reflect the extent of the project perfected within the limitations of the water right. Elements of a proof inspection may include, as appropriate, the source(s), system instantaneous capacity, beneficial use(s), annual quantity, place of use, and satisfaction of provisions.

FINDINGS OF FACT AND ORDER

Upon reviewing the investigator's report, I find all facts, relevant and material to the subject application, have been thoroughly investigated. Furthermore, I find the appropriation of water as recommended will not be detrimental to existing rights or to the public interest.

Therefore, I ORDER the approval of Application No. G2-30363 subject to existing rights and the provisions specified above.

YOUR RIGHT TO APPEAL

You have a right to appeal this decision to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this decision. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal you must do the following within 30 days of the date of receipt of this decision:

- File your appeal and a copy of this decision with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this decision on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

ADDRESS AND LOCATION INFORMATION

Street Addresses	Mailing Addresses
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503	**Department of Ecology** Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608
Pollution Control Hearings Board 1111 Israel RD SW STE 301 Tumwater, WA 98501	**Pollution Control Hearings Board** PO Box 40903 Olympia, WA 98504-0903

And Send a Copy of Your Appeal to: Thomas Loranger Department of Ecology Southwest Regional Office PO Box 47775 Olympia, WA 98504-7775	

For additional information visit the Environmental Hearings Office Website: http://www.eho.wa.gov . To find laws and agency rules visit the Washington State Legislature Website: http://www1.leg.wa.gov/CodeReviser.

Sincerely,

Thomas Loranger
Water Resources Section Manager

BACKGROUND

Olympic Property Group LLC (OPG) has proposed a water supply system to serve 244 lots, 54 of these lots are part of the proposed Tala Point PRRD. To serve the projected demand, OPG submitted the subject Ground Water Application to the Washington State Department of Ecology (Ecology) in 2006. The subject application was assigned an application number G2-30363 and priority date of August 25, 2006. The applicant requests an Instantaneous Quantity (Qi) of 158 gpm from one well based on the projected demand for multiple domestic supply.

Tala Point PRRD Project Description

For the subject Application, OPG proposes to withdraw groundwater from proposed well to provide a water supply for the proposed Tala Point PRRD. As part of the conditions of approval of the PRRD, Jefferson County required (Ordinance No. 10-1212-05, MLA05-060, condition 80 f.) the Tala Point PRRD to not only serve the 54 lots within the Tala Point PRRD but also serve the surrounding parcels whose owners have expressed interest in participating in the cost of constructing the new system. These parcels, which potentially bring the total to 244 lots to be served, are currently served by a Group B water system and exempt wells. The proposed water system will be named at a later date. A summary of the Ground Water Right Application G2-30363 is presented in Table 1.

Table 1. Summary of Application No. G2-30363

Attributes	*Proposed*
Applicant	Olympic Property Group, LLC
Date of Application	August 25, 2006
Instantaneous Quantity	158 gallons per minute
Annual Quantity	80.5 acre-feet
Source	Proposed Well
Points of Withdrawal	NE ¼ of NW ¼ of Sec. 22, T. 28 N., R. 01 E. W.M.
Purpose of Use	Domestic Multiple
Period of Use	Continuous
Place of Use	Proposed Water System at Tala Point

There are no existing rights or other applications associated with the proposed water system. A map of the location of the proposed well location and the Tala Point PRRD is provided as Attachment 1.

Legal Requirements for Application Processing

The following requirements must be met prior to processing a water right application:

- **Public Notice (RCW 90.03.280)**
  A public notice of the application must be published in a local newspaper once a week for two consecutive weeks (RCW 90.03.280). The public notice of application G2-30363 was published in the Port Townsend & Jefferson County Leader during the weeks of October 6 and 13, 2010.
- **State Environmental Policy Act (SEPA)**
  The subject water right is not subject to SEPA [WAC 197-11-305 and WAC 197-11-800(4)] because the instantaneous quantity is less than the threshold of 2,250 gallons per minute. As part of the PRRD approval process, a SEPA checklist was submitted to Jefferson County Department of Community Development on December 23, 2008.
- **Water Resources Statutes and Case Law**
  Chapters 90.03 and 90.44 RCW authorize the appropriation of public water for beneficial use and describe the process for obtaining water rights. Laws governing the water right permitting process are contained in RCW 90.02.250 through 90.03.050. In accordance with RCW 90.02.290, determinations must be made on the following four criteria in order for an application for water rights to be approved:
  - Water must be available;
  - There must be no impairment of existing rights;

- The water use must be beneficial; and
- The water use must not be detrimental to the public interest.

- **Administrative Status of Surface Water Bodies**
  Surface water bodies in the region are subject to administrative regulations governing the right to withdraw water for beneficial use. Minimum instream flow regulations for the Quilcene-Snow watershed (WRIA 17) have recently been adopted. Washington Administrative Code (WAC) Chapter 173-517 establishes instream flows in several streams and closures to further water right allocations in other stream basins. WAC 173-517-090 lists instream flows. None of the streams with instream flows are in the vicinity of the subject water right application. Ludlow Creek, located to the northwest of the proposed OWSI point of withdrawal, is listed as a closed stream in WAC 173-517-100.

  WAC 173-517 includes two types of management areas for administering future water appropriation and use: reserve management areas (stream management units) and coastal management areas. The OPG application is located within the Squamish Harbor coastal management area. There are no instream flows or closures proposed for the Squamish Harbor coastal management area, but the drainage for Ludlow Creek, located to the northwest, has been designated as a stream management unit with minimum instream flows.

INVESTIGATION

The examination of Ground Water Right Application G2-30363 was led by consultants from GeoEngineers, Inc. contracted as part of Ecology's cost reimbursement program to facilitate the phased processing of the application. Phil Crane of the Water Resources Program, Ecology (Southwest Region), oversaw the examination and provided review.

The investigation included, but was not limited to, the review of:

- The State Water Code, specifically WAC 173 and RCW 90.
- Washington State Department of Ecology, 2010, Washington State Well Log Viewer website, <http://apps.ecy.wa.gov/welllog/index.asp> (Accessed July 2010).
- Washington State Department of Ecology, 2010, Water Rights Tracking System (WRTS) website <http://www.ecy.wa.gov/programs/wr/rights/tracking-apps.html> (Accessed July 2010).
- Washington State Department of Natural Resources, Washington Interactive Geologic Map, http://wigm.dnr.wa.gov/, (Accessed July 2010).
- Tabor, R.W. and Cady, W.M., 1978, Geologic map of the Olympic Peninsula, U.S. Geological Survey Miscellaneous Investigations Map 994, scale 1:125,000.
- Grimstad, P. and Carson, R.J., 1981, Geology and ground-water resources of eastern Jefferson County, Washington: Water Supply Bulletin 54, 125 p., 2 plates. Available online at <http://www.ecy.wa.gov/programs/eap/wsb/wsb_Geology-and-Groundwater.html>.
- Cascadia Consulting Group, 2003, Watershed Management Plan for the Quilcene-Snow Water Resource Inventory Area (WRIA 17), Adopted by the WRIA 17 Planning Unit, 195 pp. Available online at: <http://www.ecy.wa.gov/pubs/0306029.pdf>.
- HDR, 2007, Olympic Water and Sewer, Inc. Water System Plan Update.
- Parametrix, Inc., Pacific Groundwater Group, Inc., Montgomery Water Group, Inc. and Caldwell and Associates, 2000, Stage 1 Technical Assessment as of February 2000 Water Resource Inventory Area 17, prepared for Water Resource Inventory Area 17 Planning Unit, 414 pp. Available online at: <http://www.ecy.wa.gov/apps/watersheds/planning/docs/STAGE%201%20ASSESSMENT.PDF>.
- Robinson & Noble, Inc., 1989, Water resource evaluation for Ludlow Utilities and construction of Well 14.
- Robinson & Noble, Inc., 1992, South Aquifer Study Port Ludlow/Shine Area, prepared for Pope Resources.
- Robinson & Noble, Inc., 2005, Olympic Water and Sewer, Inc. Construction and testing of Production Well 16.
- Robinson & Noble, Inc., 2010, 2009 Annual report on the Port Ludlow area groundwater monitoring program for Port Ludlow Associates, LLC.
- Bender Consulting, LLC, 2008, Aquifer recharge area report, Tala Point Planned Rural Residential Development, Port Ludlow, Washington. Prepared for OPG.
- United States Geological Survey (USGS) topographic maps.
- Information submitted by and conversations and/or meetings with Brandon Bird of OPG.
- GeoEngineers, March 31, 2010, Phase 1 review of water right application G2-30442.
- A site visit on August 4, 2010.

The first portion of the examination included the determination of the groundwater source area for the Olympic Water & Sewer Inc (OWSI) application G2-30442 for proposed withdrawals from three wells located approximately 1 mile SSW of the OPG application (Attachment 1), as summarized in the Phase 1 Review report prepared for that application by GeoEngineers (2010). The groundwater source area was estimated using available information regarding the aquifer properties, projected pumping rates and aquifer boundaries. Application G2-30363 submitted by OPG was found to be within the same groundwater source area and senior to the OWSI application. Both applications were processed by GeoEngineers under the same cost reimbursement program.

Site Visit

Joel Purdy, a Senior Hydrogeologist with GeoEngineers, conducted a site visit on August 4, 2010. Brandon Bird of OPG gave a tour of the property. The tour included the inspection of the proposed location of the supply well.

Existing OPG Water Rights

There are no existing water rights associated with the proposed water system.

Hydrogeologic Evaluation

The project site lies south of Port Ludlow and north of Shine on the west shore of the inlet to Hood Canal, herein referred to as the Port Ludlow/Shine peninsula. The application is located within the Jefferson County portion of the Quilcene-Snow Water Resource Inventory Area (WRIA 17).

Geology

The geology of the general project area has been reported by Tabor and Cady (1978) and Grimstad and Carson (1981). The geology of the project vicinity generally consists of Tertiary basalt bedrock underlying unconsolidated deposits formed as the result of erosional and depositional events during multiple glaciations. The last glaciation occurred during the Ice Age approximately 15,000 years ago, known locally as the Vashon Stade of the Fraser Glaciation. The geologic history of the Ludlow area results in complex layering of sedimentary deposits (stratigraphy) overlying the primarily volcanic bedrock. The typical sequence for the Port Ludlow/Shine peninsula, from youngest to oldest, is Vashon recessional outwash, Vashon till and Vashon advance outwash, underlain by older glacial, non-glacial deposits and volcanic bedrock of the Crescent Formation.

Hydrology

The WRIA 17 Level 1 Technical Assessment (Parametrix and others, 2000) established 10 subbasins based generally on surface drainage basins and hydrologic characteristics. The POU and POW are located within the Ludlow subbasin.

The Ludlow subbasin includes the drainages of Shine and Ludlow Creeks. Ludlow Creek and its small tributaries have a drainage area of 17.3 square miles located northwest of the Port Ludlow/Shine peninsula. Ludlow Creek drains into the head of Port Ludlow Bay. Shine Creek drains 5.2 square miles into Squamish Harbor (off the Hood Canal), southwest of the OPG source well. There are no instream flow gaging sites on Ludlow or Shine Creeks.

The peninsula includes an upland lake, Teal Lake (Attachment 1), that drains to the north. The lake is perched on glacial till at an elevation well above the underlying aquifer, which is separated beneath a substantial confining layer (see discussion below), such that appropriations from the OPG well should have no effect on the hydrology of the lake.

Hydrogeology

Characterization of the general hydrogeology for the Ludlow subbasin was conducted by several authors. Grimstad and Carson (1981) mapped surface geology, listed water wells in the study area, and provided a limited discussion of potential well yields. Robinson & Noble (1992) conducted a detailed hydrogeologic analysis of the Port Ludlow/Shine area and described the principal source aquifer for the subject application (designated the South Aquifer), which consists of pre-Vashon glacial and non-glacial deposits at and below sea level. The water-bearing portions of the aquifer generally consist of sand or sand and gravel. The boundaries of the South Aquifer were delineated by Robinson & Noble (1992).

The South Aquifer generally overlies the basalt bedrock unit mapped as the Tertiary volcanic unit named the Crescent Formation (Taber and Cady, 1978). The bedrock is the source of supply for a few domestic wells in the vicinity. In addition to the South Aquifer, the overlying Vashon advance outwash materials may be saturated in lower elevations along Ludlow Creek or in perched aquifer occurrences and near lakes.

The South Aquifer is not in hydraulic continuity with perched surface water, such as Teal Lake, and upper reaches of the streams on the Port Ludlow/Shine peninsula (e.g., Teal Creek). Groundwater withdrawal from the proposed well will not impact these surface water bodies because: 1) there are unsaturated sand and gravel zones between ground surface and the South Aquifer that create a hydraulic disconnection; 2) a thick sequence of low-permeability deposits, forming a substantial confining layer, occurs between ground surface and the South Aquifer; and 3) the South Aquifer has a much lower potentiometric surface elevation relative to the lake and stream bed elevations. There is potential for upward leakage from the South Aquifer only near the mouths of the streams, below the approximate elevation of 40 feet MSL where the potentiometric surface of the South Aquifer is greater than the ground surface or stream bed elevation.

As part of the investigation of subsurface conditions, Ecology Water Well Reports (well logs) in the general vicinity of the OPG application were downloaded from Ecology's Well Log Viewer website. Grimstad and Carson (1981) provide a list of older water wells and some construction and testing information. We have reviewed well logs of nearby wells and hydrogeologic information regarding the site vicinity, including the previously discussed sources. The following is a summary of the water sources and hydrogeology in the area:

- The water supply wells that are used to define the South Aquifer are generally highly productive (yields >100 gpm) and located near the center of Port Ludlow/Shine peninsula. These wells are completed at or below sea level.
- Wells located peripheral to the South Aquifer are generally low-yield (<25 gpm). Most of these wells are located along the shoreline and completed in confined aquifers at or below sea level. These wells are generally screened across fine sands or sand and gravel in areas considered to be in hydraulic continuity with the South Aquifer (Robinson & Noble, 1992).
- Few wells are completed in the bedrock beneath the South Aquifer and they are generally low-yield (<5 gpm).
- Groundwater flow in the South Aquifer is presumed to be generally from west to east near the center of the Port Ludlow/Shine peninsula and locally toward the nearest saltwater body.
- Neither Shine nor Ludlow Creeks are considered to be in hydraulic continuity with the South Aquifer due to hydraulic flow boundaries, intervening confining units and the occurrence of bedrock at or near surface laterally between the aquifer and the creeks.

Demand Projections

According to the application, 54 single-family residential lots are proposed for the Tala Point PRRD. The Jefferson County ordinance requires that the water right application be sufficient to serve existing parcels surrounding the Tala Point PRRD. The surrounding parcels represent a potential for 190 more connections to the system. The demand for the system to serve a potential total of 244 lots is projected to be 158 gpm with appropriate storage facilities. At 0.33 acre-feet per year per lot, the demand is projected to be 80.5 acre-feet per year. Using these values, it is recommended that the requested instantaneous amount of 158 gpm be permitted and an annual amount of 80.5 acre-feet per year additional right be permitted.

Impairment Considerations

The withdrawals by the applicant related to the proposed well would be from the South Aquifer at or near sea level. There are several existing water rights and claims within the groundwater source area and the boundaries of the South Aquifer. The potential impairment of these rights is examined below.

Hydrogeologic Characteristics

The source aquifer for the proposed well is expected to be the South Aquifer. There have been aquifer tests conducted on Olympic Water and Sewer, Incl. (OWSI) Wells 14 and 16, located approximately 1 mile south-southwest of Tala Point (Attachment 1) , as reported by Robinson & Noble (1989; 2005). Based on these tests, the aquifer transmissivity ranges from 9,600 to 110,000 gpd/ft, with a storage coefficient of 0.0007 to 0.0009 determined from observation well data. These values are within the expected range for formations encountered during drilling and are characteristic of a relatively highly productive and moderate to highly confined aquifer (Robinson & Noble, 2005). Water level data indicates that the aquifer is influenced by barometric fluctuations and is approximately 95 to 98 percent barometrically efficient.

Groundwater in the South Aquifer flows generally radially toward Hood Canal and Port Ludlow. Shallower, perched groundwater discharge to lakes, streams, or springs or infiltrates to the South Aquifer. Groundwater from all aquifers eventually discharges to Hood Canal.

Area of Influence

The boundaries of the area of influence for application G2-30363 were conservatively estimated based on the drawdown cone likely to develop within a confined aquifer with similar characteristics to what is found at the OWSI wellfield. At a radial distance of 1 mile from the proposed OPG well, we calculate a maximum interference drawdown of 1.6 feet under the worst case conditions (transmissivity of 9,600 gpd/ft and storativity of 0.0007), assuming long-term continuous pumping for 100 days at 50 gpm (equivalent to 80.5 acre-feet per year). This area of influence extends in an arc to the aquifer boundary to the west and eastward of the well locations.

Potential for Impairment of Existing Rights

There are seven groundwater rights and 10 surface water rights within the area of influence, which is estimated to be an approximately 1-mile radius around the proposed well where significant drawdown may be expected to occur within the South Aquifer (Attachment 1). The existing senior water rights within the area of influence are summarized in Table 2.

Table 2. Summary of Existing Senior Water Rights in the Source Area.

	Owner	Control Number	Priority Date	Purpose[1]	Qi[2]	Qa[3] (ac-ft/yr)	Source
Ground Water	Parker, J.D.	G2-*07831CWRIS	10/20/1965	DM, IR	25 gpm	4	Well
	Lake, Norman H.	G2-24415CWRIS	2/4/1977	DS	10 gpm	1	Well
	Peterson, Allen J.	G2-25914CWRIS	5/26/1981	DS	10 gpm	1	Well
	Olympic Water & Sewer	G2-25816CWRIS	2/24/1981	DM	175 gpm	80	Wells 13 and 16
	Olympic Water & Sewer	G2-27492P	2/13/1989	DM	300 gpm	161	Wells 14 and 16
	Iliad, Inc.	G2-27518CWRIS	3/3/1989	DM	20 gpm	8.5	Well
	Jefferson County Water District 1	G2-26422CWRIS	10/3/1983	MU	98 gpm	90	Well
Surface Water	Shepherd, L.J.	S2-*17246CWRIS	4/24/1962	DS	0.01 cfs	--	Unnamed Stream
	Jefferson County Water District 1	S2-*17326CWRIS	6/4/1962	DM	0.16 cfs	--	Unnamed Stream
	Snyder, G.L.	S2-*17913CWRIS	5/15/1963	DS	0.01 cfs	--	Unnamed Stream
	Brandt, G.D.	S2-*17956CWRIS	6/6/1963	DS	0.01 cfs	--	Unnamed Stream
	Goodwin, B.S./I.J.	S2-*17983CWRIS	6/19/1963	DS	0.005 cfs	--	Unnamed Stream
	White, J.A.	S2-*18173CWRIS	9/23/1963	DS	0.01 cfs	--	Unnamed Stream
	Drake G.A & Morrison, J.	S2-*14153CWRIS	12/3/1966	DM	0.05 cfs	--	Unnamed Stream
	Mahon, Dwain et ux.	S2-22985CWRIS	7/19/1974	DS	0.02 cfs	0.5	Unnamed Stream
	Crittenden, Richard	S2-24252C	7/15/1976	DS	0.01 cfs	0.5	Unnamed Stream
	Cuykendall, D.	S2-27574CWRIS	7/10/1989	IR, ST	0.007	2.7	Unnamed Stream

[1] DM = domestic multiple; IR = irrigation; DS = domestic single; MU = municipal; ST = stock watering;
[2] Qi = instantaneous quantity;
[3] Qa = annual quantity

There are two existing rights related to the OWSI water system (Health ID 68700) wellfield located approximately 1 mile south-southwest. The closest senior groundwater right (G2-25914) is located approximately ¼ mile northeast of the proposed OPG well site. Additional interference drawdown on the order of 0.4 to 3.2 feet may be experienced due to pumping from the proposed new OPG well. This is not considered sufficient to impair the existing water right.

The surface water rights listed in Table 2 divert water from unnamed streams that run at relatively high elevation, above the thick confining layer that effectively isolates them from the South Aquifer. Also, the potentiometric surface for the South Aquifer is significantly lower than the elevation of the unnamed stream, such that there is no hydraulic connection except at the mouth of the streams and therefore no possibility of impairment.

The Jefferson County Water District No. 1 groundwater right is located approximately 1½ miles south and is associated with a water system (Health ID 36705Y) with a single well source. Health's online database of public water supply systems was checked to confirm that no other water systems were found within the area of influence.

Within the full extent of the South Aquifer, there are 10 groundwater rights and 18 surface water rights totaling 515.5 acre-feet/year. There are also 78 groundwater claims and 17 surface water claims. The anticipated drawdown in the South Aquifer from the operation of the OPG well is not expected to impact existing water users. The predicted area of drawdown interference is approximately 1 mile based on aquifer characteristics found at the OWSI wellfield located about 1 mile southwest of the OPG well site.

Potential for Seawater Intrusion

For groundwater wells completed in aquifers that are hydraulically connected with saltwater, pumping may induce the migration of saltwater into the freshwater aquifers. This is known as seawater intrusion. The proposed OPG well will likely be completed at or below sea level, thus, it may have the potential for seawater intrusion. However, since the well site is approximately 2,500 feet from the shoreline, the pumping rate is relatively low, and the expected static water level elevation is significantly above sea level, the OPG source well is not likely to induce seawater intrusion, either at the well or near the adjacent shoreline. Long-term monitoring of chloride and conductivity conducted by OWSI since 1994 at wells located on and near the Tala Point area indicate that there has been no trend toward increasing concentrations of these two indicators of seawater intrusion (Robinson & Noble, 2010).

Water Availability

The amount of groundwater available in the South Aquifer is limited based on amount of recharge. The recharge area for the South Aquifer is approximately 4.5 square miles (Robinson & Noble, 1992). WRIS 17 Watershed Management Plan estimates the average annual groundwater recharge for the Ludlow Sub-basin at 10 inches/year. That equates to a total volume of 2,400 acre-feet/year of groundwater recharge within the South Aquifer boundaries. The annual quantities (Qa) of the certified and permitted water rights within the South Aquifer area total 9.7 acre-feet/year for surface water and 303.5 acre-feet/year primary rights and an additional 206 acre-feet/year "supplemental" rights for groundwater.

On this basis, it appears that approximately 22 percent of the estimated average annual groundwater recharge within the boundaries of the South Aquifer is allocated. The requested amount of 80.5 acre-feet for OPG would

increase the proportion allocated to approximately 27 percent. If the OWSI application (G2-30442) is approved for 90 acre-feet/year, approximately 31 percent will be allocated. This estimate does not include the usage by exempt wells or claims in the area. The exempt wells are likely concentrated along the shoreline east and northeast of the proposed OPG well. It is proposed that the OPG well would serve some of the existing exempt users in the Tala Point area.

The OPG application is located within the Squamish Harbor coastal management area of WRIA 17. There are no instream flows or closures proposed for the Squamish Harbor coastal management area. Groundwater to be captured by the OPG well would naturally discharge to salt water of Hood Canal and Port Ludlow. No impact to surface (fresh) water is expected to occur from the operation of the well. Therefore, groundwater is legally available for appropriation.

Public Interest Considerations

RCW 90.03.290 requires that a proposed appropriation not be detrimental to the public interest.

The 1971 Water Resources Act provides the most comprehensive list of legislative policies that guide the consideration of public interest in the allocation of water. These policies generally require a balancing of the state's natural resources and values with the state's economic well-being. Specifically, the policies require allocation of water in a manner that preserves instream resources, protects the quality of the water, provides adequate and safe supplies of water to serve public need, and makes water available to support the economic well-being of the state and its citizens.

The withdrawal of up to 80.5 acre-feet of water year-round at an instantaneous rate of up to 158 gpm for multiple domestic use is consistent with state policy without adversely impacting instream flows or other public needs and values. No detriment to public interest could be identified during the examination of the subject application.

Consideration of Protests and Comments

No protests were received during the public comment period between October 6 and November 13, 2010.

CONCLUSIONS

Water must be available

The proposed OPG well is located in an area that receives abundant rainfall and groundwater recharge. Results of the groundwater analysis indicate no significant water level drawdown from pumping of well is expected at distance. It is concluded that sufficient water is available to provide 158 gpm instantaneously, and 80.5 acre-feet annually.

No legal constraints to the use of the water by this right were identified, and the water is considered legally available.

There must be no impairment of existing rights

The requested withdrawal is not expected to interrupt or interfere with the availability of water to existing rights.

The water use must be beneficial

Municipal supply is considered a beneficial use in accordance with RCW 90.54.020.

The water use must not be detrimental to the public interest.

No considerations that are detrimental to the public interest were identified for the proposed diversion.

RECOMMENDATIONS

Based on the above investigation and conclusions, I recommend that the Application No. G2-30363 be authorized in the amounts and within the limitations listed below and subject to the provisions beginning on Page 2.

Purpose of Use and Authorized Quantities

The amount of water recommended is a maximum limit and the water user may only use that amount of water within the specified limit that is reasonable and beneficial.

- 158 gpm
- 80.5 acre-feet per year
- Multiple domestic use

Points of Withdrawal

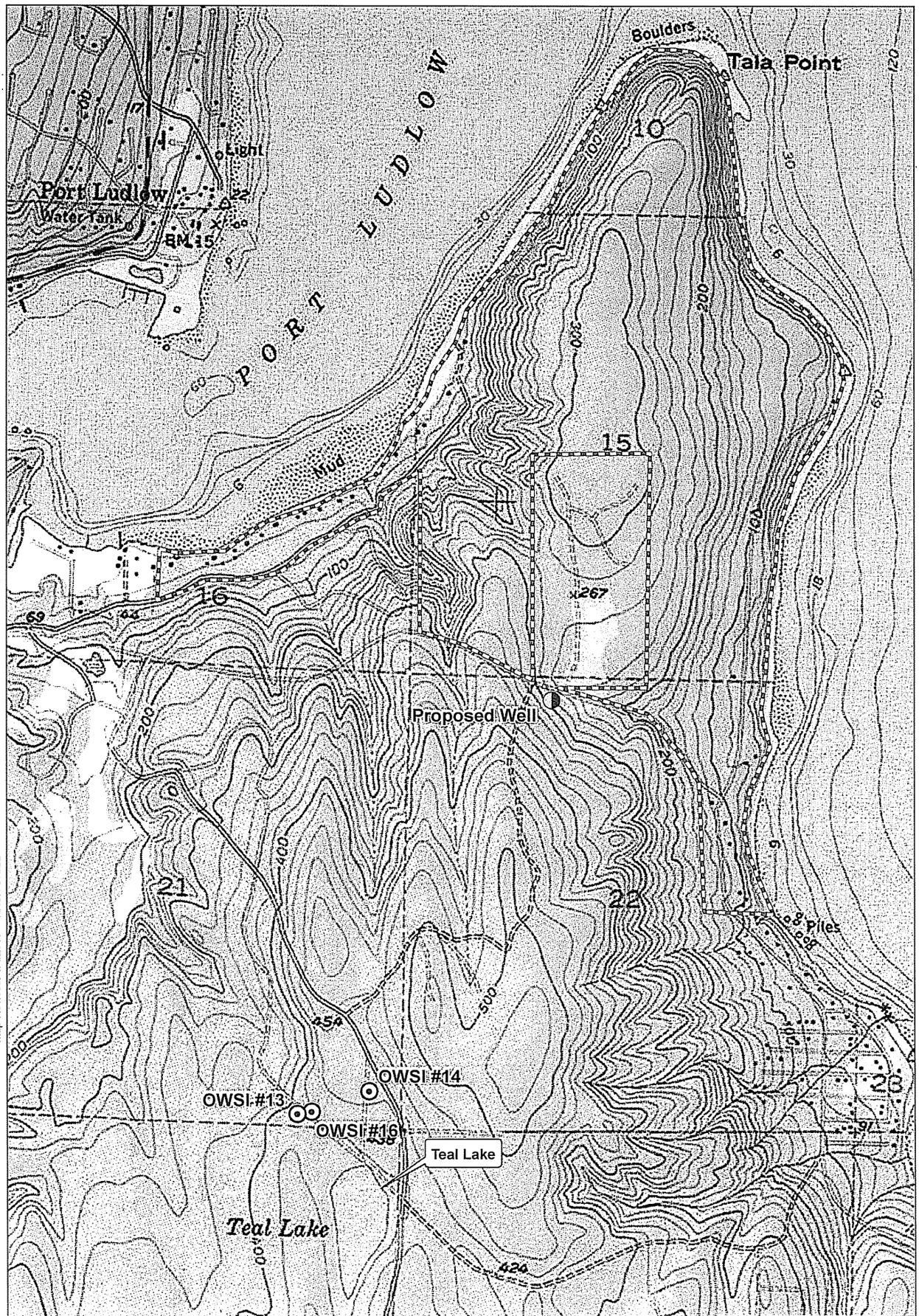
NE ¼ of the NW ¼ of Section 22, T. 28 N., R. 01 E. W.M.

Place of Use

As described on Page 1 of this Report of Examination.

Report Reviewed by: Phil Crane 3/30/2011
Phil Crane Date

If you need this publication in an alternate format, please call Water Resources Program at 360 407-6600. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.



Propsed Well

Olympic Water and Sewer Inc. Production Wells

Place of Use

1,500 0 1,500

Feet

N

W E

S

Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
Data Sources: USGS Topographic Maps, ESRI Data 2008.
Projection: NAD 1983, Washington South (ft).

Location Map

Olympic Property Group
Jefferson County, Washington

GeoEngineers

Attachment 1

Map Revised: 1/4/2011 KKS:TCK:EL

Office: TAC Path: \\Tac\projects\0\0504052\GIS\0504005001_A1.mxd